

NEW NEARCTIC FOSSORIAL HYMENOPTERA.

By NATHAN BANKS.

Museum Comp. Zoology, Cambridge, Mass.

The following new species were found in the course of identification work on the Museum collections. A synoptic table of *Pepsis* is given, and also for most of the Eastern species of *Dasymutilla*. In both of these structural characters are utilized that have not previously been considered. The types are all in the Museum of Comparative Zoology.

CRABRONIDÆ.

Entomognathus memorialis sp. nov.

♀. In structure close to *E. lenapeorum*, that is with the frontal groove evanescent and the front below ocelli tumid; clothed with much pale hair, the clypeus silvery, metanotum with sculpture very similar to that species. Black; the scape beneath, pronotum each side and connected down to the tubercles, tegulæ in part, two small spots on the scutellum, front and mid tibiæ on outer sides, hind tarsus on base, and a spot each side on abdominal segments 1 to 4, yellow. It differs from *lenapeorum* in the spotted abdomen, black tarsi and larger size, and the abdomen is broader, especially at base.

Length, 6.2 mm.

From Glencarlyn, Va., July 26th.

Lindenius wenonah sp. nov.

♂. Structure in general similar to *L. errans*, the ocellar depressions, however, very indistinct, body covered rather more thickly with sericeous pubescence. It differs at once in coloration and anterior tarsi. In the front tarsus the first joint has an expansion on outer side as wide as the joint; this expansion is mostly black. The clypeus, mandibles (except tips), scape, pronotum, tubercles, tegulæ, scutellum and post scutellum (each with borders laterally), most of the legs, and nearly entire dorsal surface of abdomen, yellowish. The flagellum is pale beneath; bases of femora and tips of tarsi dark, the basal half of the first abdominal segment, and the borders of the others narrowly black. The wings have yellowish-brown venation; the venation is on the same plan as in *L. errans*, except that the cubital cross-vein ends near the middle of the marginal cell, instead of plainly before.

Length, 4 mm.

From Tallac, Eldorado Co., Calif., (Giffard).

Rhopalum (Alliognathus) carolina sp. nov.

♀. Shining black, with fine appressed white pubescence, silvery on the clypeus and half-way up the orbits; scape beneath, front tibiae and tarsi, mid-tarsi (except apical two joints), and the spurs yellowish. Structure in general similar to the western *A. occidentalis*, but smaller. The truncate projection of clypeus barely noticeable; frontal groove and ocellar depressions distinct; first joint of the flagellum barely longer than the second; foveæ at base of the enclosure very small and faint; the Y-ridge distinct and transverse ridges outside of it; hind tibiae not serrate, but with a row of fine, short bristles; pygidium not very broad, truncate at tip; stigma dark brown, veins much paler brown.

Length, 5.5 mm.

From north fork of the Swannanoa River, Black Mts., N. Car., May.

Thyreopus rufibasis sp. nov.

♀. Black, clothed with sericeous pubescence, dense and silvery on the clypeus. Mandibles (except tip), clypeus, scape, pedicellum, first joint of flagellum, pronotum, tubercles, large spot below fore wing, tegulae, scutellum, and spot each side in front, first and second segments of abdomen almost wholly, and very narrow spot each side on the third segment, yellow to rufous; the legs largely rufous, femora darkened through middle. Wings brownish, stigma yellowish, veins brown. First joint of flagellum plainly longer than the second; ocelli rather large, hind ones scarcely nearer eyes than to each other; pronotum smooth; dorsulum densely, finely punctate; scutellum more sparsely punctured; postscutellum striate; metanotum coarsely rugose, the groove broad in the middle, each side are several irregular areas, behind on each side is a lateral area which is crossed by two or three ridges, outside of the lateral ridges are a few foveæ; abdomen very minutely punctate, moderately slender, pygidium punctate and hairy.

Length, 9 mm.

From Gulfport, Florida, (Reynolds).

Blepharipus parkeri sp. nov.

♀. Black, more or less sericeous, most distinct on clypeus, but also on lower sides of head, mesopleura and tibiae. Mandibles in part, scape beneath, anterior tibiae in front, mid and hind tibiae at base, front and mid basitarsi and the spurs pale whitish; sometimes a small spot on the pronotum. Wings with black stigma and venation. Enclosure of metanotum strongly marked and margined by impressed foveæ, the surface each side convex and polished, posterior face slightly rugulose at tip, nearly smooth above, lateral ridges distinct on lower half, and outside of it a foveate groove, the pleura smooth and shining. Abdomen polished, apical segments more sericeous, below with row of hairs at tip of each segment; pygidium dull punctate.

Length, 5 to 6.5 mm.

From Lexington, Mass., July. Nearest to *B. ater*, but distinct by the pale marks.

OXYBELIDÆ.

Oxybelus carolinus sp. nov.

♀. Closely similar in most respects to *O. packardi* Rbt.; it differs in that the spine is acute at tip, tapering throughout and the face is broader than in that species, the lateral surfaces of the propodeum are more completely striate; the upper part of the mesepisternum has no distinct oblique rugæ. There are no spots on the scutellum nor is the hind border of mesonotum pale; otherwise it is similar to that species and of the same size.

From Southern Pines, N. Car., May 29th, (Manee).

PHILANTHIDÆ.

Philanthus carolinensis var. *reductus* var. nov.

Polished black and marked with yellow about as in the typical form, but the scutellum has no mark, nor is there an interrupted band on the first abdominal segment, and in the female there is no spot on the pygidium. The first abdominal segment is a little more swollen above than in the type. In the male the hair on venter is mostly confined to the middle area of the last ventral, where it forms a dense transverse row, elsewhere the hair is sparse, (in the typical form the last two ventral segments are densely clothed with hair).

Length, 7 to 9 mm.

From Chesapeake Beach, Maryland, and Black Mt., N. Car. Both this and the typical form differ from *P. bilunatus* in the position of the interrupted band on the second abdominal segment; in the latter species the band is further back, and curves backward, moreover the bands on other segments are subinterrupted each side, and the pit on the metanotum is striate at bottom.

LARRIDÆ.

Tachytes pennsylvanica sp. nov.

♂. Related to *T. pepticus* of the west. Black with black legs, only about two or three joints of tarsi pale, front coxæ without spines and femora without groove. It is a larger and heavier insect than *T. pepticus*, the face of the male is broader below, and clothed with yellowish gray hair, white above near the ocelli, the hair on pleura and especially on the metanotum is much longer and denser than in *T. pepticus*. The clypeus has a broad projection in the middle; the metanotum with a dorsal groove. The third joint of the antenna

is plainly a little longer than the fourth; the pygidium is clothed with white hair; the emargination of the ventral plate is broader than in *T. pepticus*.

Length, 13 mm.

From Rockville and West Fairview, Penna., July and August (Knull and Kirk).

***Tachysphex maneei* sp. nov.**

♀. Resembles *punctifrons* in having long antennal joints, but with a narrower vertex, and the face clothed with a silvery pubescence; legs with black (instead of white) spurs; the head is more coarsely punctate than in *T. punctifrons* and the abdomen with four silvery bands. The lower edge of clypeus is evenly rounded; width of vertex about equal to second and third antennal joints together, much less than the third and fourth together, the third barely shorter than the fourth, this and all beyond longer than usual; dorsum of metanotum finely granulate, the sides finely striate; pygidial area slender, and sparsely punctate; marginal cell obliquely truncate. Color, wholly black.

Length, 8.7 mm.

From Southern Pines, N. Car., August 19, (Manee).

***Larropsis distincta* var. *semirufa* var. nov.**

Structurally similar to the typical form, but in both sexes the basal two or three segments of the abdomen are bright red above. In the male the pygidial area is not silvery above as in the typical form, but is punctured in the same way. As large as the typical form, which it appears to replace in the north.

From Lexington, Dennis, Provincetown and Essex Co., Mass., in August and September, (Morse and Banks).

PSAMMOCHARIDÆ.

***Psammochares eurydice* sp. nov.**

♀. Closely resembles *P. tropicus*; black, with reddish on second segment of abdomen extending partly over the first and third segments. Structure of thorax, legs, abdomen, and venation about as in that species; the hair on basal abdominal segment is shorter and the groove on metanotum is not as evident. It differs in that the head is much more narrow, the face at vertex is hardly as wide as the second and third joints of the antennæ together; the third joint of the antennæ is rather longer than in *Ps. tropicus*, the spines of the comb of front tarsi are rather shorter, and the ocellar triangle is more equilateral, the lateral ocelli a little nearer to the eyes than to each other.

Length, 13 mm.

From Spring Creek, Decatur Co., Georgia, July 16, (Bradley).

Psammochares sublaevis sp. nov.

♀. Black. Spines of comb of anterior tarsi very long and curved, as in *P. scelestus* and *P. astur*; third joint of antennæ very long, with the second about equal to vertex width, third and fourth joints subequal; vertex straight across; ocelli as in allied forms; pronotum angulate behind; metanotum rather short, no groove; legs slender and spined as in allied forms. Body throughout with very short hair or almost absent, that on head above antennæ hardly more than one-half as long as in *P. scelestus* or *P. astur*, below antennæ almost without hair; hair on mesonotum very short, that on metanotum fairly long, almost wholly absent from pleura, (which is very hairy in *P. scelestus* and *P. astur*); very few hairs on front of anterior coxæ, mid-coxæ with only few very minute hairs below, (prominent in *P. scelestus*, but not in *P. astur*). Wings black; both submarginal cells longer than high; first recurrent ends near tip of second submarginal, second recurrent bowed out, ends near middle of the third submarginal cell.

Length, 10 to 12 mm.

From Marion County, Indiana, and Sea Cliff, N. Y.

Lophopompilus carolinus sp. nov.

♀. Black, with a red mark on the second abdominal segment partly divided, as in *L. atrox*. Structurally similar to *L. atrox* in face, antennæ, thorax, legs and venation, but only about one-half the size of that species. It differs from *L. atrox* in that there is practically no hair on the pleura, only few fine, scattered hairs, while in *L. atrox* the pleural hair is long and dense; the hair on other parts of the body is, perhaps, a little shorter proportionally than in that species. The emargination of the clypeus is nearly as large as in *L. atrox*.

Length, 12 mm.

From Black Rock, North Carolina, September, (Sherman).

Batazonus flavipennis sp. nov.

Head mostly yellowish, darker in middle above the antennæ; antennæ pale on basal half, beyond dark; thorax mostly dark, hind and lower border of pronotum pale, and some pale on mesonotum and scutellum; abdomen mostly yellow, the basal segments darker on apical part; femora dark on basal half or more, beyond the legs are yellowish; wings yellowish, apex distinctly dark. Vertex rather narrow, not as wide between eyes as the length of third joint of antenna; lateral ocelli nearer to eyes than to each other. The spines in the comb of anterior tarsi are very long and rather flattened, as in *B. algidus* and *ferrugineus*; the clypeal suture is as in *B. algidus*; from this latter it is separated by the very different coloration.

Length, ♀, 20 mm.; ♂, 15 mm.

From Salt Lake, Utah (Garman) and Jemez Springs, New Mexico (Woodgate).

Pedinaspis mariæ var. **antennalis** var. nov.

Colored in general like typical *P. mariæ*; the thorax reddish, abdomen mostly reddish, basal segment rather darker, second with dark tip, third and fourth mostly black, pale on base, fifth and sixth with silvery sericeous hair; venter pale on base, black toward tip; wings marked as in *P. mariæ*, but the pale band broader and more distinct. It differs from *P. mariæ* in having the first and second joints of the antennæ reddish, and in the reddish clypeus; the legs are almost wholly black as in *P. mariæ*. The posterior face of the metanotum is transversely rugose, more than in *P. mariæ*. Smaller than that species.

Length, 11 mm.

Falls Church, Va., 28th July.

In *P. legatus*, which also has the basal joints of antennæ rufous, the whole head is also rufous, and the marks on posterior part of abdomen are different.

Pseudagenia floridana sp. nov.

♀. Metallic blue as in *P. coerulescens*; the head and antennæ rufous, the head with a large quadrate dark spot inclosing ocelli and reaching nearly to the base of the antennæ. Abdomen metallic bluish above, dull yellowish beneath. Legs with the tibiæ and tarsi black; the femora and coxæ rufous, the coxæ and the mid and hind femora with a dark spot or streak above. Wings nearly hyaline, tip darker; spurs black. Structure and venation similar to *P. coerulescens*, the thorax with silvery pubescence.

Length, 6 mm.

From St. Augustine, Florida, 17th April, (C. W. Johnson).

Pepsis novitia sp. nov.

♂. Related to *P. mildei*; black, iridescent purple, legs black, antennæ (except basal joints) yellowish; wings colored as in *P. chrysothemis*, broad basal and apical dark bands, no pale tips, middle yellowish, but not very bright. The fourth ventral segment has two oblique rows of long curved bristles (as in *P. elegans*), and on fifth segment lateral rows of erect hair, between these hair combs the surface of the fourth and fifth segments is polished and slightly depressed. The subgenital plate is elongate, somewhat hairy towards tip, and with a faint basal median carina. The metanotum is transversely wrinkled, no ridge separating the posterior slope, which is also partly wrinkled, the lateral angles fairly prominent, but dentate. Third cubital cell fully as broad as long. Size of *P. mildei*.

From Fedor, Lee County, Texas, 29th May, (Birkman).

Pepsis arizonica sp. nov.

♂. Black; abdomen bluish and parts of the head and thorax also in certain lights. Wings yellowish, about as in *P. formosa*, base and tip

broadly black, but the black rather definitely limited, reaching to the third cubital cell, base not black as far out as in *P. ceberus* and *P. chrysothemis*; head and pronotum with long black hair, metanotum with shorter hair, the upper surface strongly striate across, and with a distinct longitudinal depression; suddenly declivous behind, the division marked by a median hump and lateral teeth; genital plate about one and two-thirds as long as broad, sides subparallel, tip deeply emarginate in middle, surface with few short hairs, base with a triangular tubercle, its apex running off into a median carina which extends nearly one-half way down the plate.

Expanse, 54 mm.

From Huachuca Mts., Arizona, (Biederman).

Pepsis augustimarginata Vier.

Palmerlee and Dragoon, Arizona. The male differs from *ceberus* in having the subgenital plate much more slender, the sides nearly parallel. The apex of the wings is only narrowly dark, and the base is dark hardly as far out as in *ceberus*; the metanotum has no distinct division between upper and posterior face, but is strongly striated, and densely clothed with long hair. The ventral hair-tufts are short, and with a wide free space between them.

The species of *Pepsis* which I have seen from our country can be separated by the following table:

- | | |
|--|---------------------|
| 1. Wings black, or mostly so; not yellow or reddish..... | 2 |
| Wings largely yellowish or reddish..... | 5 |
| 2. Antennae yellowish..... | <i>elegans</i> |
| Antennae black..... | 3 |
| 3. Apical third of wings whitish hyaline..... | <i>venusta</i> |
| Only a narrow apical margin hyaline..... | 4 |
| 4. Apical margin of hind wings not hyaline in the female; with front femora hairy beneath; male with the subgenital plate elongate and long-haired, | |
| <i>obliquerrugosa</i> | |
| Apical margin of hind wings narrowly hyaline in the female; front femora barely, if at all, hairy beneath; male with the subgenital plate short, and with a transverse carina, not noticeably hairy..... | <i>mexicana</i> |
| 5. Antennae with several joints yellowish or reddish..... | 6 |
| Antennae wholly black..... | 7 |
| 6. Apex of wings broadly dark banded; male without apical fringe on the fifth ventral segment..... | <i>novitia</i> |
| Apex of wings narrowly banded with dark; male with apical fringe to the fifth ventral segment..... | <i>mildei</i> |
| 7. Males..... | 8 |
| Females..... | 15 |
| 8. Subgenital plate elongate, more or less hairy, without a median tooth or a transverse ridge..... | 9 |
| Subgenital plate shorter, with median and apical transverse carinae, the median one curved at ends, the apical one tooth-like at each end; no ventral hair-brushes..... | <i>chrysothemis</i> |
| Subgenital plate with a median tooth and an apical or subapical transverse ridge; no ventral hair-brushes..... | 13 |
| 9. No ventral hair-brushes..... | 10 |
| Ventral hair-brushes present toward the tip of the abdomen..... | 11 |

10. Subgenital plate slender, densely hairy; wing-tips hyaline.....*nephele*
 Subgenital plate broad, emarginate at tip, scarcely hairy, wing-tips
 broadly dark.....*arizonica*
11. Fourth ventral segment with oblique hair-row or tuft; extreme tip of
 antennae black.....12
 Fourth and fifth ventral segments with hair-tufts; extreme tip of antennae
 reddish.....*boguei*
12. Subgenital plate more than three times as long as broad.....*angustimarginata*
 Subgenital plate about twice as long as broad.....*cerberus*
13. Wings not darkened near tip.....*pallidolimbata*
 Wings plainly darkened before tip.....14
14. Wing reddish.....*cinnabarina*
 Wings yellowish.....*formosa*
15. Front femora with long hair beneath; very large species with the pre-
 apical dark band of fore wings broad and extending basally into the
 third cubital cell.....*nephele*
 Front femora with few if any hairs beneath.....16
16. The hind tibiae have the bristles among the spines much longer than the
 spines and curved; no distinct transverse ridge on metanotum separating
 upper and posterior surfaces.....*inermis*
 The hind tibiae with bristles straight and not longer than the spines;
 metanotum with a distinct ridge separating the upper and posterior
 faces.....17
17. The posterior part of pronotum very plainly hairy above.....18
 Posterior part of pronotum not hairy or scarcely so.....20
18. Wings reddish, extreme tip pale; posterior face of metanotum striate
 across.....*cinnabarina*
 Tips of wings wholly dark.....19
19. Extreme tip of antennae reddish; tip of wing broadly dark; posterior face
 of metanotum not striate in middle.....*boguei*
 Extreme tip of antennae black; tip of wing narrowly dark; posterior face of
 metanotum striate in middle.....*angustimarginata*
20. Wings without distinct preapical dark band; posterior face of the meta-
 notum striate across.....*pallidolimbata*
 Wings with apical or preapical dark band.....21
21. Apical dark band to wings; posterior face of metanotum scarcely striate,
lucasi
 Preapical dark band, extreme tip pale; posterior face of metanotum
 striate across.....*formosa*

Three species not placed in the table have been recorded from the United States.

***Pepsis charon* Mocz.**

Recorded from Texas, is similar to *P. elegans*, but the male has short hair on the fourth and fifth ventral segments.

***Pepsis sanguiguttata* Christ.**

Recorded from Texas, is a West Indian species with dark wings on which is a stellate reddish spot.

***Pepsis circularis* Fox.**

Close to *P. chrysothemis*; the subgenital plate is the same; it differs in that the sixth ventral segment is extended above to cover the sixth dorsal segment; but one male is known; it is from Texas.

MUTILLIDÆ.

Nomiaephagus oculatus sp. nov.

♀. Closely related to *N. simillima*, the head fully as broad, and the eyes much more than their diameter from the posterior corners; the thorax is less strongly constricted in the middle, and the posterior slope has the edges less dentate than that species. The coloring is about the same, except that on the abdomen the apical fringe of the second segment is pale, except for a small spot in the middle, where it is dark, (in *simillima* dark except extreme sides), and the pale on the top of the second segment is in the form of two circular spots, quite sharply marked.

Length, 10 mm.

From St. Marys, Georgia, March 6th–April 18th, (O. Bangs). Probably it is the form referred to by Fox from Florida, with the yellow in the form of rounded spots.

Dasymutilla alesia sp. nov.

♀. In the section of *D. cypris*, with an elongate tubercle extending toward eye; eyes moderately large, about their diameter from the apex of the tubercle. Head and thorax with appressed golden hair, and scattered, erect, mostly black bristles; those on the posterior slope of the metanotum are pale; first abdominal segment with pale hair on disc, at apex black, second segment with four large, sharply defined pale spots, the two in front are the smaller, the rest of the segment above deep black, with black hair, the apical margin black-haired, except the extreme sides; third segment black and black haired, except at extreme sides; fourth and fifth with pale hairs; pygidium rather closely and fully longitudinally striate. Carina of first ventral not prominent, an elongate tooth in front; scutellar scale distinct; no transverse carina at end of mesonotum; third joint of the antenna little shorter than fourth and fifth united. Legs pale, tarsi darker, with pale hair.

Length, 8 to 11 mm.

From Falls Church, Va., 13th August to 20th September.

Dasymutilla cypris var. **interrupta** var. nov.

♀. Agrees with *D. cypris*, except that the apical margin of the second abdominal segment is not wholly fringed with pale golden hair; there is a small, median patch of the golden hair, and each side of it is a longer area of black hair; the extreme sides pale-haired.

From Falls Church, Va., July and August.

The Eastern species of *Dasymutilla* that I have seen can be tabulated as below for the females. I have used several of Mr. Rohwer's names, although some may be only varieties, others however are surely distinct species. Mr. Rohwer has kindly examined several of my specimens and furnished notes on the structure of some of his types.

1. Hair of head, thorax and abdomen long and dense, red or yellow, the abdomen with a median band of black hair, large species..... 2
Hair of head, thorax and abdomen above more sparse, so that the sculpture can be more or less plainly seen; abdomen not red or yellow with a median black band, smaller species..... 3
2. Hair red..... *occidentalis*
Hair yellowish..... *comanche*
3. Temples with a tubercle or carina..... 4
Temples without tubercle or carina..... 10
4. Petiole quadrate, hardly thickened posteriorly; pygidium striate; second segment black haired at tip, others with pale hairs..... *rugulosa* Fox
Petiole plainly enlarged and thickened behind..... 5
5. Antennal scrobes carinate above; tips of second and third segments black-haired; pygidium striate; spurs pale..... *carinceps* Fox
Antennal scrobes not carinate above..... 6
6. Hair at tip of first segment largely pale; at tip of second pale, with a median black patch..... 7
Hair at tip of first segment largely black; at tip of second segment either all black, or pale in middle; pygidial striae reach the tip..... 9
7. Temples with an outer carina; pygidial striae weak, hardly reach tip; metathorax strongly rugose; third joint of antenna but little longer than fourth..... *chattahoochei* Brad.
Temples with a superior oblique tubercle directed toward eyes..... 8
8. Pygidial striae strong, but do not reach the tip, eyes about diameter from tubercles; hair of metanotum pale..... *allardi* Roh.
Pygidial striae reach tip; eyes less than diameter from the tubercles; hair of upper part of the metanotum black..... *rubicunda* Brad.
9. Hair at tips of second and third segments mostly pale..... *cypris* Bl.
Hair at tips of second and third segments mostly black..... *alesia* n. sp.
10. Pygidium plainly striate longitudinally..... 12
Pygidium not striate longitudinally..... 11
11. Pygidium finely granulate; second segment with black hair in middle; no scutellar scale; head broader than thorax..... *obscura*
Pygidium irregularly rugose, or with short longitudinal rugae; second segment with a pale spot in middle of hind margin; first segment with black hair at tip; head not as broad as thorax..... *harmonia*
12. No scutellar scale..... 13
The scale present..... 15
13. Hair at tip of first segment pale, that at tip of second pale in middle, but a dark patch each side..... *finni* Roh.
Hair at tip of first segment black..... 14
14. A small spot of yellow hair in middle of apical margin of second segment, *blawa* Roh.
No such spot, hair of margin black..... *champlaini* Roh.
15. A transverse carina at tip of mesonotum..... 17
No such carina..... 16
16. Hair at tips of first and second segments pale..... *sappho* Fox
Hair at tips of first and second segments black..... *zella* Roh.
17. Tip of second segment with black hair..... *ferrugata* Lep.
Tip of second segment with a pale median spot; eyes larger in proportion to head..... *georgiana* Roh.

- D. ferrugatella** Rohwer is practically the same as **D. zella**, in the former the erect hair of head is paler, and that on the apical segments of abdomen white, while in the latter species the erect hair of head is dark, and the hair on apical segments more yellowish.
- D. mutata** Blake, as I have identified it, is but a form of **cypris** in which the apical hair of abdomen is white, instead of the pale golden of **D. cypris**.
- D. plesia** Rohwer, I have not seen, but is said to agree with **D. ferrugata**, except that the third joint of antennæ is shorter.
- D. errans** Rohwer runs to **sappho**, except that there is a median patch of black hair on apex of second segment.
- D. segregata** differs from **D. champlaini** in shorter thorax, and longer second segment. I have not seen it.
- D. virginica** Rohwer and **D. carolina** Rohwer I have not seen. According to Rohwer (in litt.) both have the scutellar scale, and lack the carina at tip of mesonotum. They would therefore come close to **D. zella**, but appear to be larger; but I have specimens I believe to be **zella**, which are fully as large and agree with description of **virginica**.
- D. vierecki** Rohwer agrees with **zella**, except that there is no ventral carina on first segment. Although the shape of this carina varies in **D. zella**, I have seen none without it.